

Summary of SIP-adus Project (FY2016)

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| Name of the project | Development of V2V,V2I Communication Technology Toward the Automated Driving Systems |
| Responsible Organization | DENSO CORPORATION, Panasonic Corporation, PIONEER CORPORATION, The University of Electro-Communications |

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| Name | Hideaki NANBA, DENSO CORPORATION |
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Object of the Project

Automated driving and connected car shall be realized by applying ICT. V2V, V2I technology shall be higher and sophisticated.

Practical developing themes are high reliable communication (enlarging the communication capacity and stabilization of the communication quality) and application of the predictive information.

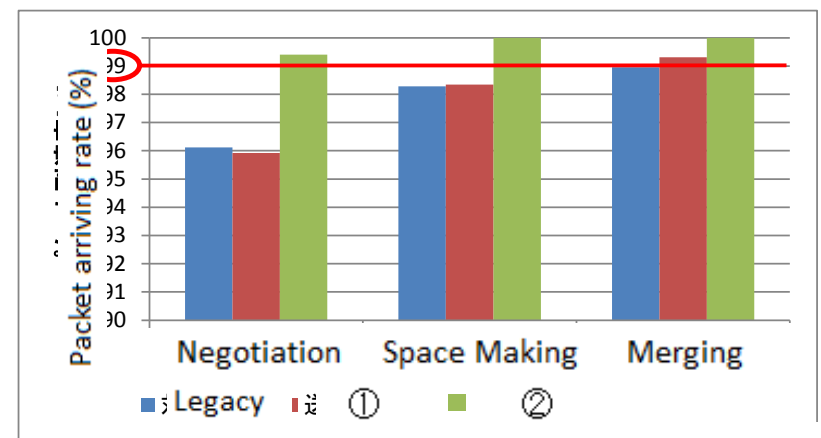
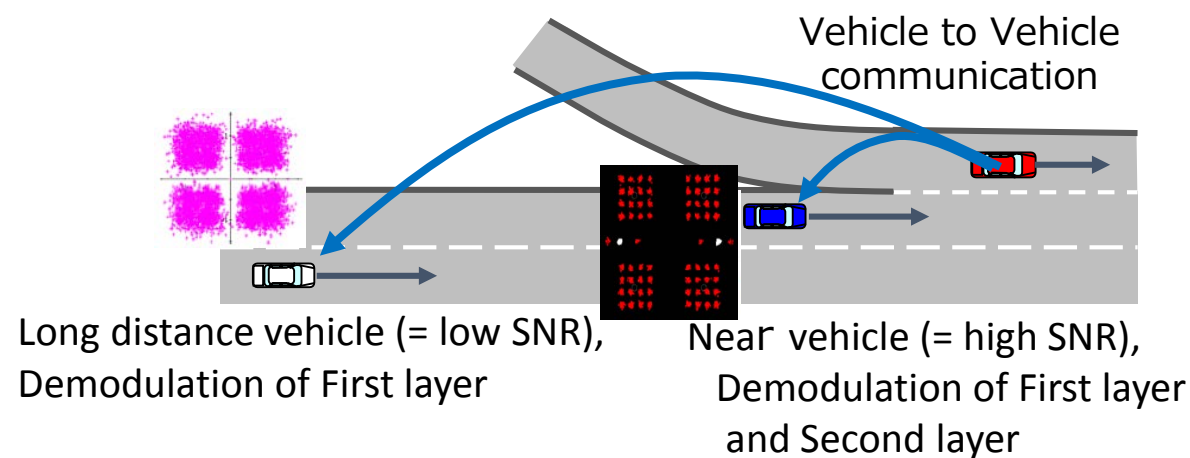
Project Summary

(1) Enlarging the communication capacity

Developed the multi-layer modulations to enlarge the data transmitted capacity, in back compatibility

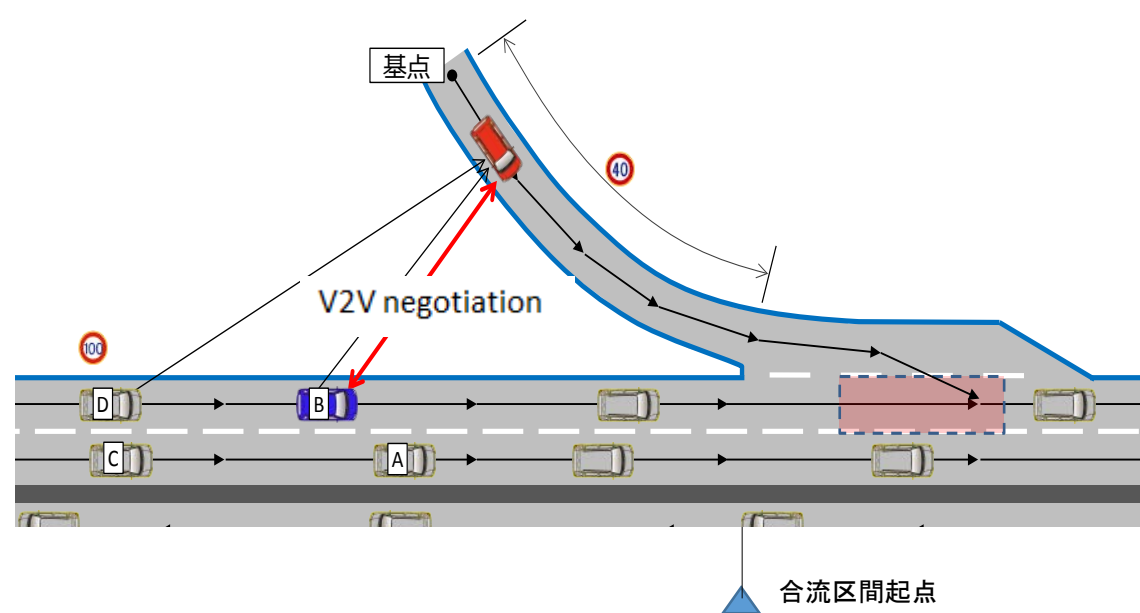
(2) Stabilization of the communication quality

- ① Variable transmitting frequency function
 - North America, Europe standardization on V2X.
- ② Transmission timing reserved function



Simulation result

(3) Merging control using the predictive information



In order to smooth merge, particular information (Lane ID, Clearance, Target point etc.) is used in the V2V negotiation

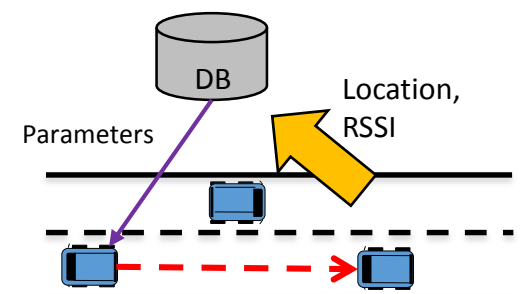
(4) Monitoring car filtering technology using the road ID



(Within 100m, 67% reduction)
To reduce the CPU load, developed the method of filtered the monitoring Cars on V2X.

(5) Radio Map Data Base

Adaptive communication based on the location information is targeted.



Future plan

We made clear the problems and proposed the solution of the wireless communication technologies in order to realize the automated driving system. From now on, automobile engineer and communication engineer should work together in this field.

Practically, (1) Setting the experimental guideline committed by the expert literacy. And then, (2) Making the communication standard.